JUNE 1913 VOL. 35 No. 6

THE JOURNAL

OF

THE AMERICAN SOCIETY OF MECHANICAL ENGINEERS

PUBLICATION OFFICE, 29 WEST 39TH STREET . . . NEW YORK

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THE JOURNAL is published monthly by The American Society of Mechanical Engineers. Price, 25 cents a copy, or $2 a year, to members and affiliates of the Society; 35 cents a copy or $3 a year to all others. Postage to Canada, 50 cents additional; to foreign countries, $1 additional. Entered as second-class matter, January 4, 1912, at the Postoffice, New York, N. Y., under the act of March 3, 1879.

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THE AMERICAN SOCIETY OF MECHANICAL ENGINEERS

VOL. 35 JUNE 1913 NUMBER 6

SPRING MEETING

The meeting at Baltimore was in every way a successful gathering. The Society and its friends were the guests of the Engineers' Club of Baltimore, with whom the local members of the Society and the officers at Annapolis coöperated to the fullest extent; and the work of the local committees under the direction of the Executive Committee of the Engineers' Club was planned and carried out with such nicety of detail as greatly to enhance the enjoyment of all in attendance.

The registration was small as had been anticipated, in view of the approaching German Meeting, there being 142 members present and 185 guests. There have seldom been professional sessions at any of the Society's meetings, however, at which there was greater sustained interest or more effective discussion.

It was the purpose of the Committee on Meetings to make the trial this spring of fewer sessions than usual for the discussion of papers, a plan which appeared to meet with general approval. After a strenuous winter's work, the conditions are more propitious for relaxation and enjoyment of one's friends at a spring convention than for the reading of technical papers. On the other hand, there has recently been a marked increase in the number of papers presented at annual meetings in December, so that no diminution in the total number of papers for the year is anticipated.

The Belvedere, which was the headquarters for all the Baltimore sessions, is ideal for the purpose. The whole top floor is given up to assembly rooms well adapted either for social or professional needs.

TUESDAY EVENING RECEPTION

On Tuesday evening, May 20, was a gathering in the tea room of the Belvedere for an informal reception by the officers of the Engineers' Club of Baltimore and an address of welcome by the Mayor of Baltimore, Honorable James H. Preston.

The speakers were introduced by the President of the Engineers' Club of Baltimore, Mr. R. Keith Compton. In welcoming the guests to the city the Mayor dwelt on the importance of the present day work of the engineer and especially on the importance of his work in connection with the municipal improvements of the city of Baltimore. During a period beginning six or eight years ago some of the most important features of the city have been entirely rebuilt, and will when finished constitute a series of municipal improvements almost unprecedented in their extent.

Following the great fire, from the effects of which the city arose without outside aid, came the construction of the high-pressure fire system and there is now under way a large extension of the water system for general use, the construction of what is judged to be the finest sanitary sewerage system in the world, and many miles of the city streets are being re-paved. Other and extensive improvements have recently been completed or are contemplated, such as the municipal docks and police department buildings.

As the President, Dr. Goss, did not arrive until later, Past-President Oberlin Smith responded for the Society, outlining briefly the growth of the engineering profession from the days of the military engineer to the present time when engineering interests are so diversified that there are many established branches, represented by the four national engineering societies of today.

A few remarks upon engineering, past and present, with reminiscences of early days in Baltimore, were made by Mr. Mendes Cohen, Past-President of the American Society of Civil Engineers, and Honorary Member of the Baltimore Engineers Club.

BUSINESS MEETING, WEDNESDAY MORNING

The semi-annual business meeting was held on Wednesday

morning with the President, Dr. W. F. M. Goss, in the chair. The Secretary announced the result of the membership ballot by which 605 names were elected to membership of various grades. Of these 547 were new and the balance were promotions. This is the largest ballot in the history of the Society as a result of the splendid efforts of the Increase of Membership Committee and of many individual members who have personally aided in the work; and is all the more gratifying because of the high professional standing of these accessions as shown by the professional record pamphlet which has been distributed to the membership.

Announcement was further made of the membership ballot on amendments to the Constitution, which relate chiefly to the establishment of a new grade to be known as "Associate-Member" and to the method of election of members. An Associate-Member must be an engineer or a teacher of applied science, 25 years of age or over, and competent to execute work in his profession. This grade differs from what is now known as an "Associate" in that it is required that the candidate be 30 years of age or over and qualified to coöperate with engineers. The new method of election as explained more fully elsewhere in this issue, is by ballot of the Council instead of by ballot of the membership at large.

Under the order of new business, notice was given of the recommendation by the Council that the constitution be further amended with respect to the grades of Member and Associate-Member, in each case raising the requirements. Under the proposed plan a Member will have to be 32 years of age or over and must have been in active practice of his profession for at least 10 years and in responsible charge of important work for five years; or if a teacher, equivalent experience will be required as a professor of engineering in charge of a department. To become an Associate-Member a candidate must be at least 27 years of age, with six years' professional experience and one year in responsible charge of work. The Secretary explained that by this new grading a Member would have the same rank as the recently established "Fellow" in the American Institute of Electrical Engineers and an Associate-Member would correspond to the "Member" in that organization.

A resolution was interposed by W. J. Andrews in reference to a suitable headstone or monument to mark the grave of John

Fitch. The career of Fitch and an account of the running of his boat on the river at Philadelphia in 1790 was published in The Journal at the time of the Hudson-Fulton celebration, and it appears from advertisements of that time that passengers were carried, making this the first American passenger boat to be propelled by steam. It was voted that the matter of marking the grave be referred to the Council for appropriate action.

The meeting then proceeded to the hearing of reports of committees. That upon the Myriawatt was presented by Mr. H. G. Stott, Chairman of the Committee on the Myriawatt, who replied to the criticisms by Messrs. William Kent and George H. Barrus which were published in the May issue of The Journal. Mr. Stott's reply, with the other discussions upon the Myriawatt, will appear in a later issue of The Journal.

A Code of Ethics for engineers, published in the January issue of The Journal, was presented by Charles T. Main. In the discussion it was objected to in its entirety by Fred H. Colvin and in part by Richard H. Rice, who held that Par. 8 of the report would tend to encourage the upholding of men who had given wrong advice, and that Pars. 23 and 24 limited the advertising methods used by engineers.

Mr. Stott explained that the Code of Ethics was intended to help out young men who lacked the experience of older engineers and indicate to them a proper method of procedure in their professional relations. He did not favor establishing strict lines, but believed that a code of ethics would prove useful to young men who had not had these points of practice driven into them by hard experience.

It was proposed that the report be submitted to the membership at large and after considerable discussion as to what recommendation to make to the Council in this regard, resolutions were finally passed in the following form:

RESOLVED: That this meeting approves in general the proposed Code of Ethics for adoption by the Society.

RESOLVED: That it be recommended to the Council that the proposed Code of Ethics be printed in pamphlet form and a copy be mailed to each member of the Society, accompanied by a ballot so prepared that each member may vote upon each clause separately; and that if the majority of those voting are in favor, this Meeting recommends that the Council shall declare the report approved and shall arrange for the appointment of a committee on the interpretation of the code.

A third report to be presented was the majority report of the Committee on Standard Involute Gears. Owing to the absence of the chairman of the committee at that time, the reading of the report was deferred until later in the morning. This report and the discussion upon it will be printed later.

PROFESSIONAL SESSIONS

Following the discussion upon the reports came the first professional session with the following list of papers:

Test of a Hydraulic Buffer, Carl Schwartz

The Present Condition of the Patent Law, Edwin J. Prindle

Shading in Mechanical Drawing, Theodore W. Johnson

Cost of Upkeep of Horse-Drawn Vehicles against Electric Vehicles, W. R. Metz

It was decided to assign the single Gas Power paper on Present Operation of Gas Engines using Blast-Furnace Gas as Fuel by Charles C. Sampson, which it was expected would be presented at a separate session of the Gas Power Section, to one of the regular meetings of the Society and this came up for discussion on Thursday morning.

But two professional sessions, therefore, were held, the second on Thursday morning being devoted to the subject of fire protection with the following list of papers:

The Baltimore High-Pressure Fire Service, James B. Scott

National Standard Hose Couplings and Hydrant Fittings for Public Fire Service, F. M. Griswold

Debarment of City Conflagrations, Albert Blauvelt

Allowable Height and Area in Factory Buildings, Ira H. Woolson

The Protection of Main Belt Drives with Fire Retardant Partitions, C. H. Smith

The Life Hazard in Crowded Buildings due to Inadequate Exits, H. F. J. Porter

The discussion at both of these meetings was spirited and interesting and will be reported fully in later issues of The Journal.

On Wednesday morning the paper by Mr. Prindle on The Present Condition of the Patent Law pointed out that the decision of the Supreme Court in the "Mimeograph Case" sustaining the right of the patentee to require the purchaser of the

machine to buy of the patentee ink and paper for use on it had resulted in the introduction of a large number of bills in Congress with a view to cutting down the patentee's monopoly. It explained the general nature of the proposed legislation and its effect on the patent law and upon inventors. Upon motion of the author the following resolution bearing upon this matter was passed:

RESOLVED: That the Council be requested to take appropriate action against the amendment of the Patent Law and the bills now before Congress until a competent commission shall have reported on the advisability of the proposed changes.

CONFERRING OF HONORARY MEMBERSHIP UPON CAPTAIN CHARLES HENRY MANNING

An event that gave pleasure to all was the conferring of Honorary Membership upon Captain Charles H. Manning known for so many years as the mechanical superintendent of the Amoskeag Manufacturing Company, Manchester, N. H. Captain Manning was born in Baltimore, Md., in 1844. He received his engineering education at the Lawrence Scientific School of Harvard University and during the Civil War was in service on various ships. The war ended, there followed a period of sea duty in different parts of the world until, in 1870, he was assigned to shore duty as instructor at the Naval Academy at Annapolis.

After twelve years of continuous service there he was granted a leave of absence and took charge of the reorganization of the steam and water power plants of the extensive Amoskeag Mills at Manchester, N. H.. He later resigned from the Navy, his name being placed on the retired list in 1884.

Introducing Mr. Manning at the meeting, Dr. Goss said:

The audience has the rare privilege of counting among its numbers Charles H. Manning, one of our most distinguished engineers, who is still a retired officer of the Navy with the rank of Lieutenant-Commander and Chief Engineer. He rendered conspicuous service to the country before his retirement, and since then in the cotton mill industry of New England. He was a pioneer in centralizing power in large stations, and his efforts with the Amoskeag mills of New Hampshire brought about the conversion of sundry stations into a single station supplying steam over a large area. He is the inventor of the Manning boiler and is an authority on water power. In December last he resigned from the active direction of the engineering work of the Amoskeag mills. He is a much beloved member of this Society, of which he has been an active member since 1884. In recognition of this fact the Council has taken unusual action in bestowing Honorary Membership upon Mr. Manning.

Mr. Manning, in recognition of your great ability as an engineer, of your great character as a man and of your abiding loyalty to the profession of engineering and to the members of this Society, a petition signed by twelve members was presented to the Council at its March meeting. This petition was a document of unusual significance. The first name on the list of signers was that of Benjamin F. Isherwood, chief engineer of the Navy during the Civil War, and the last name that of Erasmus D. Leavitt, the second President of this Society, the others upon the petition being names of distinguished engineers. Acting upon this petition, the Council, having given due consideration, unanimously voted by a letter ballot to confer upon you the rank of Honorary Member, in token whereof I have the privilege this day to present you this certificate.

Captain Manning said in reply:

This is a great surprise to me and I fully appreciate the honor, coming to me as it does in my native city. I was born two or three blocks from here and raised under the shadow of the Washington monument. After what schooling I had away from here, I returned here early in the Civil War to commence my practical engineering experience, and yesterday on the boat that took you down the River I met one of my old shopmates of 52 years ago.

I have been a member of this Society from the early beginning, when we had a second story room in the library down on lower Broadway, and my old friend, Thomas Rae, was then secretary. I have always been interested in the work of the Society, have done what I could to promote it, and have enjoyed the friendship of many of the presidents, John Sweet, Loring, Melville, and that greatest of all, John Fritz, with whom I had the honor of being on very friendly terms.

The old organization has had my love and respect, and my one honor is that I have helped the cause of mechanical engineering in this country as one of the instructors at the Naval Academy in Annapolis. I spent eight of the happiest years of my life there, and I consider my work there for mechanical engineering as the greatest I have ever done. Judge by its results, for amongst my pupils were Professors Hollis, Spangler of Pennsylvania, one of our honored members who has now gone before, Cooley, Durand, and a half dozen others of the distinguished members of this Society. They had not very much use for me then, but a better set of friends I have never had anywhere in the world.

I thank you one and all for this honor.

RESOLUTIONS OF THANKS

At the close of the Thursday morning session, the following resolutions of thanks were unanimously passed:

WHEREAS, The American Society of Mechanical Engineers, in session at its semi-annual meeting, in Baltimore, Maryland, May 20 to 23, 1913, has enjoyed so profitable and delightful a visit through the efforts of the Engineers' Club of Baltimore, and of the Local Committees,

BE IT RESOLVED, That the secretary be instructed to extend the thanks

of the visiting members and guests to all who have contributed to their entertainment; to the Engineers' Club of Baltimore for their cordial hospitality; to the Executive Committee of the Committee on Entertainment, Layton F. Smith, Chairman; to the Chairmen of the various sub-committees on entertainment; to the Citizens' Committee; to the Ladies' Committee, Mrs. J. W. Shirley, Chairman; to the Committee on the visit to the U. S. Naval Academy, Prof. T. W. Johnson, Chairman; to his Honor the Mayor of Baltimore, James H. Preston, and the City Council for the demonstration of the high-pressure fire system and the use of the ice boat, F. C. Latrobe, for the trip around the harbor; to his Excellency, Governor Goldsborough, for his welcome to the State of Maryland; to Lieutenant-Commander H. I. Cone, U. S. N., for his address; to Captain Gibbons, U. S. N., Commandant of the U. S. Naval Academy, for the courtesies extended during the trip to the Naval Academy; to the Arundell Club for the use of their rooms and courtesies extended to the visiting ladies; to the various manufacturing plants that arranged trips of inspection; and to the owners of automobiles who loaned them for the use of the guests.

THE TRIP TO ANNAPOLIS

On Friday the whole day was devoted to a visit to Annapolis, the "colonial city," and to an inspection of the Naval Academy and the Government Experiment Station. The trip was made by the W. B. & A. electric road and upon arrival the party assembled at the historic State House where Washington resigned his commission as commander-in-chief of the Continental Army. The Society was received in the assembly hall by Governor P. R. Goldsborough, who welcomed them with a brief address in which he typified Annapolis as the Athens of America and referred to the beauty of the colonial buildings and the symmetry of their lines of architecture. He said that we all gratefully remembered the loyal patriots with whose names so much of historic Annapolis is associated, particularly the four signers of the Declaration of Independence whose residences still stand, Samuel Chase, Charles Carroll, Thomas Stone, and William Paca, the house of the last-named now being Carvel Hall. There is also the liberty tree, the largest tree on the Atlantic coast, under which the patriots met to protest against British domination. In the State House Congress ratified the treaty with Great Britain at the close of the Revolution and action was taken leading to the adoption of the Federal Constitution.

Dr. Goss said that it was fitting to ask Prof. Ira N. Hollis, long associated with the Naval Academy, to respond to the welcome so cordially extended by his excellency the Governor. Professor Hollis spoke as follows:

The kindness of Professor Goss has placed upon me the agreeable honor of thanking his Excellency, Governor Goldsborough, on the part of the President and members of The American Society of Mechanical Engineers, for this cordial and generous welcome to the State. We shall leave Baltimore with a most pleasing memory of the hospitality of Maryland and of the excellent judgment of that small committee of its citizens who made the plans for our visit. But this reception in the State House will add something of a deeper nature to our feelings. Here we are closer to the great man who gave up his sword to become for all time the ideal of American citizenship. We are eager and glad to think that his early career began in a branch of engineering, and in that belief, we shall carry with us to all parts of the Union a new dedication to our profession and to the service of our fellow countrymen. In this sense, Maryland has shown us that higher example of service which every engineer should rejoice to follow; and his Excellency as the representative of his State has given us an enduring satisfaction in the permission to use a room in this historic State House for our meeting in Annapolis.

The President and members of this Society express to his Excellency their wishes for his continued success, and to the State of Maryland their pride in its career. Wherever one of us shall go when we scatter this afternoon to all points of the compass, there will the Governor and the citizens of this State find a sphere of influence. Our hope is that they may soon come to let us show them the warmest center. Long live this generous commonwealth.

Following these remarks came an address by Lieutenant-Commander H. I. Cone, U.S.N., late engineer-in-charge of the naval experiment station at Annapolis.

ABSTRACT OF ADDRESS BY LIEUTENANT-COMMANDER CONE

On July 18, 1861, Congress passed the following Act:

SECTION 1537. No patented article connected with marine engines shall hereafter be purchased or used in connection with any steam vessel of war until the same shall have been submitted to a competent board of naval engineers and recommended by such board, in writing, for purchase and use.

This indicates that the business of conducting experiments on board war vessels in commission was being overdone, and in view of the fact that war had begun and the ships were needed for serious business, it was thought desirable to do the experimental work on shore.

From that time, boards of engineer officers have been appointed from time to time to make practical tests of various machines and devices offered to the navy. This work was generally done at a navy yard with such appliances as were available or could be purchased at short notice.

Naturally, among the many schemes submitted there would occasionally be one that merited serious attention, in which case the test was ordered to be made at some navy yard, either by a board or by the engineer officer of the yard, the applicant for the test paying the actual cost of labor and material as provided by law.

As time went on, however, and the navy expanded, the number of ships under repair at the yards increased, and it became more and more difficult to carry out these tests. Often a rush order would come from Washington to concentrate all force on some particular ship and get her off to sea at once. Then a test, whatever it might be, would be dropped hastily and much of the work previously put on it would be wasted, the experimenters discouraged, their interest lost.

This went on for years and George W. Melville, then engineer-in-chief, tried in vain to get an appropriation for a special experiment station where experimental work would be paramount. Finally, during the enthusiasm for the navy immediately following the Spanish War, about $10,000,000 was appropriated for the rebuilding of the Naval Academy and with it $400,000 for the much desired and greatly needed experiment station building and equipment, it being proposed to locate it in the Naval Academy grounds, and the law specifically requiring that it be located in that vicinity.

One of the aims of the experiment station is to intercept all sorts and kinds of new devices and inventions intended for use on naval vessels, or thought suitable, and sort out from this great and varied mass the few that (by long tests, specifically applied to discover their applicability and desirability for use on shipboard) are found available. The tests are made by officers who from experience are especially able to decide whether the machine or appliance under investigation is suitable for use on naval vessels, whether it could be operated successfully by the class of men usually available among the ships' crew and whether it could be kept in operation under the circumstances and conditions as they commonly exist on war vessels. These officers naturally hold the good of the service as of infinitely more importance than the success of an inventor's favorite scheme, however ingenious and interesting it may be in itself. Also they are as keenly interested in getting for the navy anything superior to that it supplants as they are firm in rejecting something that will

give endless trouble to others and quite possibly to themselves when their time comes to go to sea.

Another activity which has taxed the resources of the station is that of testing all sorts of material for use in the navy as to its relative value in addition to determining its safety and availability for naval use. Owing to law and regulations requiring that contracts be awarded to the lowest bidder on a suitable article, the Bureau of Steam Engineering has been confronted for years with confusing questions as to the suitability and quality of a great many ordinary machinery supplies. The station has in the past and is at present solving a great many of these questions, and at the same time making it fairer for the bidders as well as much more economical for the government.

Another aim and the reason for the establishment of the station at the Naval Academy is the fact that such a laboratory will be valuable for the instruction of midshipmen. The Naval Academy is now primarily a military engineering school, and this should be evidenced by the extent of the installation and the facilities for conducting research work at Annapolis, as well as by the character of the instruction imparted.

The experiment station is now also being utilized as an auxiliary to the post-graduate course in engineering. This work is essential to naval efficiency, and is earnestly desired by many junior officers of the service. Post-graduate work in engineering is absolutely necessary to secure the large complement of ordnance, electrical, radio, and engineering experts that will be needed in the near future.

There are also various classes of research work that should be and often must be conducted under municipal or national auspices, and particularly is this the case with matters relating to maritime and naval affairs. As there is hardly a shipbuilding firm on the Atlantic or Pacific coast which has paid a dividend during the past ten years, it could not reasonably be expected that such commercial interests would seriously entertain the proposition of expending large sums of money for even important engineering investigation and research work, particularly if the resulting advantages could possibly accrue to the benefit of their rivals to nearly as great an extent as it did to those who conducted the tests at their own expense.

In the short time that the station has been under actual operation the research work has borne fruit beyond the expectations

of the most sanguine. In the matter of boiler corrosion and heat transmission alone a large expense has been avoided. The station is now furnishing its designers a considerable number of data, and it is hoped to extend these so that the designs and specifications will contain only the essentials to insure safe and durable machinery and supplies, while at the same time it is intended to use as many commercial articles as requirements will permit.

There is a still broader and more important sphere of usefulness that ought to be within the capabilities of a national engineering laboratory and that is to conduct experimental research along lines suggested by the great engineering societies of the country. There are fields of investigation that cannot be expected to be covered either by individual scientific institutions, corporate interests, or even by any single commonwealth, but which could be legitimately carried on by a national engineering research institution.

The active coöperation of this Society in this matter is not only desired, but is necessary to the development of the undertaking in its fulness. It is therefore to be hoped that before final adjournment, the Society will find it within the scope of its own purpose to make arrangements to confer with the Navy Department as to the best means by which the scientific organizations of the country can coöperate with the Navy Department in extending the field of usefulness of a national engineering laboratory that ought eventually to do much for engineering prestige, progress and advance.

INSPECTION OF POINTS OF INTEREST

There remained in the forenoon time for the inspection of historic points of Annapolis under the guidance of the young officers of the Naval Academy, after which lunch was served at Carvel Hall. The afternoon was spent at the Academy and nearly every one also went across the Severn River to the naval experiment station and the aviation camp. Four of the hydroaeroplanes gave demonstration flights which could be witnessed at close range. Rain prevented the concert by the Naval Academy band and the dress parade which had been arranged for.

DEMONSTRATION OF HIGH-PRESSURE FIRE SYSTEM

A feature of the meeting was the demonstration of the high-pressure fire system at the City Hall Plaza Wednesday after-

noon, and it was fortunate that the Society were able to arrange a meeting on Fire Protection on the following day to supplement this admirable exhibit of the capabilities of modern apparatus. Two automobile hose wagons were first used, from each of which four 2½-inch streams from double lines of 3-inch hose were thrown from Monitor nozzles on the wagons; then twelve 1¾-inch streams with single lines of hose held by tripods were thrown; and finally one larger stream from a Monitor nozzle attached to a hydrant. Inspection of the pumping plant followed.

EXCURSIONS

Immediately after the demonstration of the fire system all joined in a trip about the harbor and down Chesapeake Bay, as far as Sparrows Point, by the municipal steamer F. C. Latrobe. It was a delightful trip and the committee in charge had arranged a typical Chesapeake Bay luncheon, the principal item on the bill of fare being steamed crabs, which had been caught that same day in the bay.

On Thursday afternoon many of the members took advantage of the opportunity to inspect the Jones Falls conduits, the sewage pumping plant, and the sewage disposal plant at Back River. This sewage system is being built at the expense of twenty million dollars. The storm water is delivered separate from the sanitary sewage directly into the bay, while the sewage is purified by bacterial treatment in the great disposal plant at Back River before being discharged.

On this afternoon also the ladies and many of the members as well took advantage of the generosity of the owners of automobiles who gave them a trip through the remarkably beautiful country surrounding Baltimore, all finally arriving at the Baltimore Country Club, Roland Park, where tea was served.

On the day previous the ladies had inspected the interesting manufacturing plants in the Coca-Cola Building and during their stay in the city were entertained also at the Arundell Club.

EVENING ENTERTAINMENT

On Wednesday evening was the usual lecture, given this time by Hon. O. P. Austin, Secretary of the National Geographic Society and chief statistician of the Department of Commerce. Mr. Austin has traveled widely and secured many beautiful views. His subject was Around the World in Eighty

Minutes, and a series of moving picture films were used, among them a roll belonging to the State Department showing recent work on the Panama Canal, loaned especially for the occasion by Secretary of State, Wm. J. Bryan. On Thursday evening the members and guests attended a dance and reception, with a late supper, given by the Engineers Club of Baltimore, which was the culmination of the several delightful social events of the meeting.

As mentioned at the outset the arrangements made by the various committees in charge of the entertainments had received much careful thought and were carried out with great completeness. Indicative of this was the printed matter issued; besides a program members were supplied with the beautifully printed Baltimore Book, issued by the municipality, an illustrated souvenir of Annapolis, and typewritten directions for all occasions, including notes on Annapolis, an outline of the automobile trips, and elaborate maps of Baltimore and vicinity.

GERMAN MEETING

The official party which will sail for Germany on June 10, to attend the meeting with the Verein deutscher Ingenieure in Leipzig, now numbers 243, and they will be joined in Germany by 45 others now abroad or sailing by other routes. A very complete guide book, containing the full itinerary, together with some account of the German society and the profession in general in that country, as well as of the cities and establishments to be visited, has been received and distributed to each of those who will participate in the trip.

Those in charge of the entertainment on board the S. S. Victoria Luise have the plans well under way. There will be sports of various kinds and log guessing and wireless contests, card parties, a mock trial, several lectures on German history, art, cities and educational systems by prominent members of the Society, a reception by the officers of the ship, a cotillion, a progressive dinner, and a cabaret performance. On Sunday, June 15, there will be religious services morning and evening.

The following committees have been appointed to care for the various features of the ocean trip:

ENTERTAINMENT COMMITTEE

ARTHUR M. GREENE, JR., *Chmn.*
CHARLES A. MEAD
GEO. A. ORROK
H. G. REIST
CALVIN W. RICE

ACQUAINTANCESHIP COMMITTEE

L. P. BRECKENRIDGE, *Chmn.*
WILLIAM A. DOBLE
LESTER G. FRENCH
JAMES HARTNESS
H. G. REIST
J. E. SAGUE
JESSE M. SMITH
WORCESTER R. WARNER
E. H. WHITLOCK

LADIES COMMITTEE

MRS. ARTHUR M. GREENE, JR., *Chmn.*
MISS HELEN E. ARMSTRONG
MRS. GEO. M. BRILL
MRS. JOHN R. FREEMAN
MRS. HENRY L. GANTT
MRS. FRANK B. GILBRETH
MISS KATE GLEASON
MISS ALICE MEIER
MRS. JESSE M. SMITH
MRS. WORCESTER R. WARNER
MRS. E. H. WHITLOCK

CELEBRATION ON JULY 4

JOHN R. FREEMAN, *Chmn.*
L. P. BRECKENRIDGE
JAMES HARTNESS
HENRY HESS
F. G. KRETSCHMER

A celebration of Independence Day will be held at Homburg, v. d. h., with the coöperation of the American colony in Frankfurt.

A list of the official party follows:

SAILING ON S. S. VICTORIA LUISE

ALDEN, H. W.
ALDEN, MRS. H. W.
ALDEN, HORACE
ALDEN, DOUGLAS
ALDRICH, JOHN G.
ALDRICH, MRS. JOHN G.
ALDRICH, JOHN G., JR.
ALFORD, L. P.
ALFORD, MRS. L. P.
ALLEN, MISS MABEL L.
ARMSTRONG, MISS HELEN E.
BAKER, CHARLES WHITING, JR.
BARTON, WM. H.
BATES, FRANCIS E.
BENNER, HENRY L.
BENNETT, C. W.
BENNETT, MRS. C. W.
BENNETT, MISS HELEN
BEST, J. H.
BEST, W. N.
BINLEY, WILLIAM, JR.
BINLEY, MRS. WILLIAM, JR.
BLOOD, CHARLES W. H.
BLOOD, MRS. CHARLES W. H.
BOND, GEORGE M.
BOYER, JOS.
BRAY, T. J.
BRAY, MRS. T. J.
BRECKENRIDGE, L. P.
BRECKENRIDGE, MRS. L. P.
BRIGGS, LEROY E.
BRILL, GEORGE M.
BRILL, MRS. GEORGE M.
BRILL, G. MEREDITH
BRINTON, WILLARD C.
BROOKS, J. ANSEL
BROWN, ROBERT S.
BROWN, MRS. ROBERT S.
BROWN, WYLIE
BRUEGEL, A. T.
BUNNELL, S. H.
BUNNELL, MRS. S. H.
BURLEIGH, P. GRAY
BURLEIGH, MRS. P. GRAY
BURSLEY, J. A.
BURSLEY, MRS. J. A.
BUTTOLPH, BENJ. G.
BUTTOLPH, MRS. BENJ. G.
CAREW, CLEMENT J.
CAREW, MRS. CLEMENT J.
CARPENTER, RUSSELL H.
CARR, C. A.
CHAPMAN, FRANK T.
CHAPMAN, MISS CECIL L.
CHRISTIE, A. G.
CLARKE, C. W. E.
CLARKE, MRS. C. W. E.
CLIFFORD, H. E.
COFFIN, MRS. CHARLES H.
COLEMAN, R. J.
COLWELL, A. W.
CONNON, GEORGE W.
CONNON, MRS. GEORGE W.
CONROY, RAMON A.
COOKE, HARTE
COOKE, MRS. HARTE
DART, WILLIAM C.
DAVIS, FRANCIS P.
DEBAUFRE, WM. L.
DEBAUFRE, MRS. WM. L.
DETRICK, JACOB S.

Detrick, Mrs. Jacob S.
Dickerman, A. C.
Disque Robert C.
Doble, William A.
Doble, Mrs. Wm. A.
Doble, Jesse W.
Doble, John A.
Doble, Wm. A., Jr.
Dotterweich, A. J.
Felker, Geo. F.
Fellows, E. R.
Fellows, Mrs. E. R.
Fellows, R. M.
Fischer, Ad. K.
Fitch, William K.
Ford, F. E.
Folsom, Eugene L.
Folsom, Mrs. Eugene L.
Foucar, E. L.
Foucar, Mrs. E. L.
Freeman, John R.
Freeman, Mrs. John R.
Freeman, Clark
Freeman, Harvey L.
Freeman, John R., Jr.
Freeman, Roger M.
French, L. G.
French, Mrs. L. G.
Frost, George H.
Fuller, Arthur A.
Fuller, Mrs. Arthur A.
Gantt, H. L.
Gantt, Mrs. H. L.
Gates, Philetus W.
Gilbreth, Frank B.
Gilbreth, Mrs. Frank B.
Gillespie, Mrs. D. L.
Gillespie, Miss Mabel
Gleason, Miss Kate
Goldingham, A. H.
Goldingham, Mrs. A. H.
Goss, Chauncey P., Jr.
Goss, Mrs. Chauncey P., Jr.
Graefe, A.
Greene, Arthur M., Jr.
Greene, Mrs. Arthur M., Jr.
Guilbert, H. Moss
Guilbert, Mrs. Edmund
Haight, H. V.
Hall, James A.
Harder, Lewis F.
Hartness, James
Hartness, Mrs. James
Hersey, Mayo D.
Hess, Henry
Hess, Mrs. Henry
Hess, H. D.
Hess, Mrs. H. D.
Hess, Miss M. D.
Honsberg, August A.
Horstmann, H. J.
Horstmann, Mrs. H. J.
Jackson, A. C.
Kauf, W. J.
Kaup, Mrs. W. J.
Keller, E. E.
Keller, Mrs. E. E.
Kent, Edward R.
Kent, Robert T.
Kent, William
King, L. S.
Klein, Arthur W.
Klein, Otto H.
Knowles, Helen
Knowles, Morris
Knowles, Mrs. Morris
Kornfeld, Alfred E.
LeBlond, R. K.
Leland, H. M.
Leland, Mrs. H. M.
Leonhard, Miss Dora
Leonhard, Miss Madeline
Lodge, William
Low, Fred R.
Low, Mrs. Fred R.
Low, Giles J.
Lucas, Henry M.
Macon, W. W.
Marshall, Norman
Marshall, Mrs. Norman
Mead, Charles A.
Meier, E. D.
Meier, Miss Alice
Merriman, Mansfield
Merriman, Mrs. Mansfield
Merryweather, George E.
Miller, T. H.
Miller, Mrs. T. H.
Moore, L. C.
Moore, Miss Selma J.
Moore, Samuel L.
Moore, Mrs. Samuel L.
Morse, Arthur H.
Morse, Mrs. Fannie H.
Morse Virgil
Nelson, J. W.
Nickel, Frank F.
Nickel, Mrs. Frank F.
O'Reilly, Mrs. E. R.
O'Reilly, Miss Genevieve
Palmer, George B.
Palmer, Mrs. George B.
Pelton, E. W.
Person, Harlow S.
Pinger, George C.
Price, W. T.
Reist, H. G.
Reist, Mrs. H. G.
Rice, Calvin W.
Richards, Charles R.
Richmond, Knight C.
Riley, Joseph C.

RILEY, MISS R. C.
RISTEEN, A. D.
RISTEEN, MRS. A. D.
ROE, JOSEPH W.
SADLER, C. R.
SANDERS, NEWELL
SANDERS, MRS. NEWELL
SCHMIDT, C. R.
SCHMIDT, F. L.
SCHMIDT, MRS. F. L.
SCHMITT, F. L.
SCHNUCK, EDWARD F.
DESCHWEINITZ, P. B.
SELIGMAN, WALTER
SEUBERT, ARTHUR
SHERRERD, J. M.
SHERRERD, S. H.
SKINNER, A. C.
SMITH, JESSE M.
SMITH, MRS. JESSE M.
SNYDER, W. E.
SNYDER, MRS. W. E.
SOVERHILL, H. A.
SOVERHILL, MRS. H. A.
STAPLES, R. T.
STEBBINS, THEODORE
STEBBINS, MRS. THEODORE
STETSON, GEORGE R.
THOMPSON, HUGH L.
THOMPSON, JAMES R.
THORKELSON, H. J.
THORKELSON, MRS. H. J.
THURSTON, EDW. D., JR.
THURSTON, MRS. EDW. D., JR.
THURSTON, MISS ALICE M.
DETRAMPE, ADAM
DETRAMPE, COUNTESS
TRIX, JNO.
TROEGER, JOHN F. R.
TROEGER, MISS THEODORA E.
WARNER, WORCESTER R.
WARNER, MRS. WORCESTER R.
WEBSTER, L. B.
WEBSTER, MRS. GEORGE
WELLMAN, S. KNOWLTON
WELLMAN, JULIAN A.
WELLMAN, MISS MARJORIE E.
WHEELER, W. H.
WHITLOCK, E. H.
WHITLOCK, MRS. E. H.
WILKE, MRS. WILLIAM
WILKE, MISS CHARLOTTE
WILKIN, JOHN T.
WOOD, WALTER
YOUNG, G. A.
YOUNG, VINCENT W.

UNOFFICIAL CHILD'S TICKETS HAVE BEEN SOLD TO

ALDEN, MISS MADELINE
BRILL, MASTER ROLAND
BUNNELL, MISS ELIZABETH
HESS, MASTER H. D.
KNOWLES, MASTER MORRIS
WILKE, MASTER HENRY PHILLIPS

TO JOIN THE PARTY IN EUROPE

ADAMSON, DANIEL
ADAMSON, MRS. DANIEL
ALEXANDER, M. W.
BATES, E. P.
BATES, MRS. E. P.
BOLLES, F. G.
BRILL, ELLIOTT M.
COLE, F. J.
COLE, MRS. F. J.
DAVIS, CHARLES ETHAN
DAVIS, MRS. CHARLES ETHAN
DEAN, F. W.
DEAN, MRS. F. W.
DEAN, F. H.
DEAN, S. W.
FOX, MRS. CHARLES B.
KRETSCHMER, F. G.
KRETSCHMER, MRS. F. G.
LONDON, W. J. A.
LONDON, MRS. W. J. A.
MCMYLER, MISS DORIS
MCMYLER, MISS GERTRUDE
MCMYLER, MRS. P. T.
MARKS, L. S.
MARKS, MRS. L. S.
MORGAN, L. H.
MORSE, LEWIS K.
ROBESON, A. M.
SCHLACHTER, C. H.
SCHLACHTER, MRS. C. H.
SHEARER, C. A.
SIMON, ARTHUR
SIMON, MRS. ARTHUR
SNOW, WALTER B.
SNOW, MISS RACHEL P.
SUNSTROM, K. J.
SUNSTROM, MRS. K. J.
TAYLOR, J. W.
TAYLOR, MRS. J. W.
THOMPSON, DAVID
THOMPSON, MRS. DAVID
WHITEFORD, JAMES F.
WHITEFORD, MRS. JAMES F.
WHITEFORD, MRS. A. W.
WILKE, WILLIAM

CHANGE OF ADDRESS

Members of student branches are requested to notify the Secretary of any change in address as promptly as possible, in order to facilitate receipt of The Journal.

A NEW GRADE OF MEMBERSHIP AND NEW METHOD OF ELECTION

At the Baltimore meeting amendments to the Constitution providing a new grade of membership and a new method of election were adopted.

The new grade of Associate-Member now effective is intended for the engineer twenty-five years of age or over, who has risen to a responsible position in the industrial world. Engineers of this type while not qualified for the grade of member, are entitled to more recognition than is offered in the grade of Junior. The amendment reads as follows:

> An Associate-Member shall be an Engineer or a Teacher of Applied Science of twenty-five years of age or over. He must show by his experience or by his duties that he is competent to execute work in his profession.

The inauguration of this grade will tend to raise the standard of membership in the Society and permit a more accurate grading of candidates.

The old grade of Associate will henceforth apply to non-professional applicants, i.e., executive officers of industrial enterprises and others who by reason of their association with engineers are qualified to coöperate with the Society in the advancement of professional knowledge.

The Junior grade will be assigned to the young engineer who has but recently graduated from college or who has risen to a subordinate position in engineering work through his practical experience.

PROMOTIONS

All members now holding the grade of Associate or Junior and who are qualified for a higher grade under the new grading should make application in the same way as if originally applying.

NEW METHOD OF ELECTION

A method of handling applications for admission to the Society was also adopted. In accordance with this the Council has instituted a new rule which provides that the name and address of each candidate be printed in the issue of The Journal following the receipt of the application. Members will be granted 40 days in which to advise the Secretary of any objection they may have to the election of any individual.

At the expiration of the time for which an applicant is posted

the Membership Committee will meet to consider each application and make recommendations to the Council as to the grade to which candidates who receive their favorable consideration shall be assigned.

A list of the candidates together with the recommendations of the Membership Committee will then be submitted to the Council for vote by letter ballot.

Upon the closing of the ballot by the Council the Secretary will at once advise all successful applicants of their election and submit to them a statement covering initiation fee and dues for the first year. The payment of this statement shall constitute the final step in securing admission to membership in the Society.

APPLICATIONS FOR ELECTION

The Membership Committee have received applications from the following candidates. Any member objecting to the election of any of these candidates should inform the Secretary before July 15, 1913:

ALEXANDER, WALTER P., Providence, R. I.
ALLEN, JEAN M., San Francisco, Cal.
ASH, HORACE W., Boston, Mass.
BACHARACH, HERMAN, Pittsburgh, Pa.
BAILY, THADDEUS F., Alliance, O.
BALLINGER, WALTER F., Philadelphia, Pa.
BARNES, JOHN S., Rockford, Ill.
BARNETT, CARL P., Chicago, Ill.
BARR, JAMES W., Cincinnati, O.
BARSTZ, EMIL, New York
BEAR, OLIVER, Chicago, Ill.
BECKJORD, WALTER, St. Paul, Minn.
BENEDICT, HOWARD G., Hornell, N. Y.
BERGEY, JOHN E., Philadelphia, Pa.
BERRENBERG, REINOLD, Boston, Mass.
BILLWILLER, CHARLES J., JR., Iquique, Chile, S. A.
BLAIR, FRANK M., Newark, O.
BLAKE, RAYMOND F., Ann Arbor, Mich.
BLOCK, LOUIS, New York
BORIE, RENSHAW, Stamford, Conn.
BOYER, JOSEPH, Detroit, Mich.
BRENNAN, JOHN T., Cleveland, O.
BRIGGS, HARRY E., Milwaukee, Wis.
BRIGHT, FRED E., Philadelphia, Pa.
BROWN, EARL W., Elyria, O.
BROWN, OWSLEY, Springfield, Mass.
BUFFINGTON, HARRY C., Minneapolis, Minn.
BURNETT, EARLE S., Ithaca, N. Y.
BURTON, SYLVESTER E., Los Angeles, Cal.
CADIRY, MOZUFFER, Ahmednagar, India
CALDWELL, GEO. G., Chicago, Ill.
CAMPBELL, MALCOLM, Montreal, Canada
CARDONA, JOSEPH H., Buenos Aires, Argentine Republic, S. A.
CAVE, JOHN R., New York
CHURCH, HAROLD D., Detroit, Mich.
CLARK, WM. E., Muskegon, Mich.
CONNOR, HERBERT, San Francisco, Cal.
CONROY, THOMAS M., Lima, O.
COSTERIAN, MARC R., Los Angeles, Cal.
COUTANT, JAY G., Watervliet, N. Y.
DE ANDRADE, JOAQUIM G., Ma ao, Brazil, S.A.
DONALDSON, HAROLD R., Schenectady, N. Y.
DUGAN, CLAUDE M., JR., Louisville, Ky.
DYE, IRA W., Culebra, C. Z.
DYKSTRA, JOHN E., Rock Falls, Ill.
EARLY, JOHN WESLEY, Denver, Colo.
ECKERT, ARTHUR C., St. Louis, Mo.
EDDISON, WM. B., New York, N. Y.
EDEMA, BERTUS J., Midland, Pa.
EDGERTON, LLOYD B., Upland, Pa.
EISELT, EMIL, Baltimore, Md.
ERRUNZA, JAMNADAS C., Baroda, India
FAIRCHILD, FRED P., San Diego, Cal.
FALES, HENRY H., Boston, Mass.
FARKELL, GEO. C., Elyria, O.
FARLEY, ERNST W., Richmond, Va.
FRAIM, SAMUEL R., Lancaster, Pa.
FREEMAN, ROGER M., Boston, Mass.
FREUND, WALTER F. W., Ann Arbor, Mich.
FRINK, FRANCIS G., Seattle, Wash.
FROST, FRANK G., Houston, Texas
GARDNER, WM. M., Memphis, Tenn.
GODFREY, FOSKETT H., Tacoma, Wash.
GOEBLER, CHAS., Poughkeepsie, N. Y.
GRUNWELL, PAUL C., Louisville, Ky.
GUNTHER, E., Vancouver, B. C.
GUPTA, BIRENDRA CHANDRA, Srinagar, Kashmir, India

HALL, EDWIN J. C., Yonkers, N. Y.
HALL, WM. G., Honolulu, Hawaii
HARRINGTON, WELLESLEY C., Ithaca, N. Y.
HASBERG, WM. M., Chicago, Ill.
HAYS, JOHN C., Visalia, Cal.
HAWKINS, GEO. W., Tucson, Ariz.
HAWLEY, WM. A., Indianapolis, Ind.
HEPBURN, HARRY M., Honolulu, T. H.
HINCKLEY, FRANK C., Boston, Mass.
HOLMES, FREDERICK S., New York, N. Y.
HOMI, E., Sakchi, India
HOWARD, ERNEST E., Kansas City, Mo.
HOWARTH, JACOB M., Chicago, Ill.
HOWELL, HORACE L., Niagara Falls, Ont., Can.
HUFFMAN, JOHN C., Riverside, Cal.
HUFSMITH, CLIFFORD L., Port Arthur, Texas
HULTS, EUGENE A., Chicago, Ill.
HUNT, PAUL B., Milwaukee, Wis.
HUNTINGTON, CLARENCE W., New York, N. Y.
INSLEY, WM. H., Indianapolis, Ind.
ISENBERG, HANS O. C., Wilkes-Barre, Pa.
JAEGER, MAX, Mt. Vernon, N. Y.
JOHANN, CHARLES S., New York, N. Y.
KALBACH, SAMUEL E., Reading, Pa.
KEARNEY, WM. J., Oglesby, Ill.
KELLEY, FREDK. H., Franklin, N. H.
KENNEDY, JAMES E., Hakalau, Hawaii
KEOWN, ROBERT MCA., Madison, Wis.
KESSING, ALBERT F., Porterville, Cal.
KINEADE, ELMER C., Beaumont, Tex.
KIPP, THEO., JR., Moose Jaw, Canada
KNERR, DAN G., Springfield, O.
KNOEBEL, CARL B., Sinton, Texas.
KOPKE, ERNST, Honolulu, T. H.
KRAMER, FRANK E., Mansfield, O.
LYNCH, MICHAEL A., Washington, D. C.
LYON, CLIFFORD W., Mildred, Kan.
MCDOWELL, EDWARD C., Hamilton, Canada
MAKUTCHAN, RALPH W., Hobart, Ind.
MARTENSIS, JOHN VAN S., Minneapolis, Minn.
MEAD, CHARLES A., Upper Montclair, N. J.
MEHTA, DARABSHA B., Bombay, India
MEREDITH, WYNN, San Francisco, Cal.
MESSNER, MANFRED, New York, N. Y.
MILLER, JOHN A., Nazareth, Pa.
MILLER, JOHN V., Silver Lake, N. J.
MITCHELL, J. HANSON, Richmond, Va.
MOELLER, WM., JR., Independence, Kans.
MOORE, EDMUND B., Springfield, Vt.
MORAN, DANIEL J., Ancon, C. Z.
MORRILL, GUY L., Ann Arbor, Mich.
MORTON, JOHN W., Brooklyn, N. Y.
MUELLER, HERMAN F., Minneapolis, Minn.
MUNSON, CHAS. C., New York, N. Y.
MURPHY, RALPH, Syracuse, N. Y.
NAGY, BELA, E. Cleveland, O.
NATHAN, T. U. S., Gulbargar, Hyderabad, India
NEW, WM. E., Kansas City, Mo.
NICHOLS, FRED C., Balboa, C. Z.
OHREN, GEORGE A., Vancouver, B. C.
OTTO, FREDK. A., St. Paul, Minn.
PATEL, CHUNILAL N., Baroda, India
PEARCE, ERNEST L., Marquette, Mich.
PENDER, BENJAMIN D., Washington, D. C.
PETERSON, EMIL A., Appleton, Wis.
PHILIPP, PAUL C., New York, N. Y.
PIERCE, BURTON B., Concrete, Wash.
PINCH, H. H., Transcona, Manitoba, Can.
PLANT, OLIVER W., Detroit, Mich.
PLATT, LOUIS J., Ensenada, P. R.
POWERS, JAMES, New York, N. Y.
PURCHAS, ARTHUR W., Oilfields, Cal.
PUTNAM, FREDERIC W., Durham, N. H.
REDLEIN, GEO. L., Buffalo, N. Y.
RHODES, GEO. H., Akron, O.
ROBERTS, EUGENE D., Tacoma, Wash.
ROBINSON, CHAS. G., Pittsburgh, Pa.
ROBINSON, WALTER P., Toronto, Can.
RORABECK, CLAUDE, Dayton, O.
ROSE, FRED WAYLAND, Minneapolis, Minn.
ROSENCRANTS, FAY H., Corvallis, Ore.
ROTHERHAM, GEORGE G., Troy, N. Y.
ROWNTREE, FRANK L., Meriden, Conn.
SCHELL, ERWIN H., Providence, R. I.
SCHEURMANN, WALTER P., Dayton, O.
SCOTT, J. MURRAY, Port Augusta, Australia
SCOTT, WIRT S., Columbus, O.
SERRANO, LUIS R., Santiago, Chile
SIMEON, CHARLES J., Worcester, Mass.
SITARAMACHAR, BACHAHALLI, Mysore, S. India
SMITH, FREDERICK CROCKER, Port Arthur, Tex.
SMITH, JAS. A., Schenectady, N. Y.
SOUBA, WM. H., Ft. William, Can.
SPICE, CHARLES G., Detroit, Mich.
SPRAGUE, BENJAMIN O., Adeline, La.
STAINES, ALBERT G., Wilkes-Barre, Pa.
STENBOL, CARL, Copper Cliff, Ont., Can.
STICKNEY, CHARLES A., St. Paul, Minn.
STRONG, ALBERT WM., Minneapolis, Minn.
STRUCKMANN, EDWIN, Des Moines, Iowa
SWEETZER, WM. J., Cleveland, O.
TAYLOR, DONALD F., E. Pittsburgh, Pa.
TAYLOR, STEVENSON P., New York, N. Y.
THAYER, WM. C., Dayton, O.
TODD, WM. J., Edmonton, Can.
VALTIER, FRANZ V., Chicago, Ill.
VAN HAERST, JOHN C., So. Bethlehem, Pa.
VINCENT, GILBERT I., Des Moines, Ia.
VON ROTTWEILER, GEORGE, Waterloo, Ia.
WALDEN, ALBERT E., Baltimore, Md.
WARD, CLARENCE E., Cleveland, O.
WHITACRE, ROBERT B., St. Paul, Minn.
WHITE, J. WM., JR., San Francisco, Cal.
WHITNEY, CHAS. S., New York, N. Y.
WILSON, H. HOWELL, Altoona, Pa.
WOOD, ERNEST H., Wilmington, Del.
WOOD, WM. R., St. Paul, Minn.
WORTHEN, CHARLES B., Trenton, N. J.
ZIMMERMAN, PETER C., Yamhill, Ore.

PROMOTION FROM JUNIOR

BRESLOVE, JOSEPH, Pittsburgh, Pa.
CHESS, HARVEY B., JR., Pittsburgh, Pa.
CHURCH, ELIHU C., New York
CORE, W. WALLACE, Newark, N. J.
DE BAUFRE, WM. L., Annapolis, Md.
FISHER, ELBERT C., Saginaw, Mich.
FORDY, JOHN E., Wilmington, Del.
GLASGOW, CARR L., Montreal, Can.
GREENE, ERNEST WOODRUFF, Nutley, N. J.
MOTT, ABRAM C., JR., Philadelphia, Pa.
RANDALL, JOHN A., Brooklyn, N. Y.
RUPP, MANNING E., Encoyd, Pa.
SPRAU, WM. C., Chicago, Ill.
TAYLOR, HARVEY B., Philadelphia, Pa.
WHEELER, EARL, Washington, D. C.

PROMOTION FROM ASSOCIATE

DOUGLAS, COURTNEY C., Chicago, Ill.
LOCKETT, KENNETH, Chicago, Ill.
VANDEMOER, JOHN, Chihuahua, Mexico

SUMMARY

New applications	186
Promotion from Junior	15
Promotion from Associate	3
Total	204

CURRENT AFFAIRS OF THE SOCIETY

Among the bequests of the will of the late Admiral Geo. F. Melville, Past-President and Honorary Member of the Society, was one of one thousand dollars to the Society, to be devoted to the annual award of a gold medal, known as the Melville Prize Medal, for original work.

MILWAUKEE SECTION

The members of the Society in Milwaukee and its vicinity have organized a local section and a committee, consisting of Fred. H. Dorner, Chairman; Arthur Simon, E. P. Worden, M. A. Beck, and Henry Weickel, has been appointed. It is proposed to hold not less than two meetings a year, and to coöperate in professional meetings and other matters with the Milwaukee Engineers Society and the Milwaukee section of the American Institute of Electrical Engineers.

NATIONAL DRAINAGE CONGRESS

The Society was represented at the National Drainage Congress in St. Louis, April 10-12, 1913, by John Hunter, Honorary Vice-President, and a very complete report of its proceedings was recently rendered to the Council. In view of the great floods in the middle West, the congress was the most important of the three thus far held, and much attention was drawn to it from all parts of the country. Its three hundred or more delegates included prominent engineers, doctors, public officials and

private citizens from nearly every state in the union. Resolutions were adopted calling on President Wilson and Congress to establish a department of public works, to have general charge of all conservation and reclamation work, and the formation of a National Malarial Congress was also endorsed to have special charge of the stamping out of malaria.

ELLIOTT CRESSON MEDAL AWARDED TO DR. STEINMETZ

One of the Elliott Cresson Medals was awarded this year by the Franklin Institute to Dr. Chas. P. Steinmetz, Mem.Am.Soc. M.E., who delivered before the meeting called for the purpose an address on Some Electrical Problems Awaiting Solution.

CALVIN W. RICE, *Secretary.*

RESOLUTIONS ON THE DEATH OF JOHN FRITZ

At a recent meeting of the Board of Directors of the John Fritz Medal Fund Corporation, established to perpetuate the memory of Mr. Fritz, and upon which the Society is represented by four members, as are also the American Society of Civil Engineers, the American Institute of Mining Engineers and the American Institute of Electrical Engineers, the following resolutions were adopted:

The Board of Directors of the John Fritz Medal Fund Corporation, learning with sorrow of the death of Mr. John Fritz at his home in South Bethlehem, Pennsylvania, on February 13th, 1913, in the ninety-first year of his age, desires to place upon its records this minute, upon the completion of his long and useful life of effective service to his profession and his country.

In 1902, when Mr. Fritz was approaching his eightieth birthday, his friends and admirers planned to give a dinner at which he should be the guest of honor. A dinner, however, was felt by many to be inadequate to commemorate so great a man, and to signalize the indebtedness of the profession of engineering for such a life so lived. A dinner, however, is soon forgotten and leaves no permanent record. Out of this thought grew the idea of creating a fund, by gift from the many who could attend and from the many more who could not be so assembled, the income from which should be used in honor of Mr. Fritz, to recognize and reward achievements in engineering similar to those which had made his life so valuable to the profession and to the world. The result was a substantial subscription from the members of the four great engineering societies, and from other friends and professional associates of Mr. Fritz, and the creation of an incorporated body, to act as Trustees of the fund, and the judges who should award a medal for notable scientific or industrial achievement.

The directors of the corporation founded in April 1903, to execute this trust, do not feel that they are called upon on this occasion to make any

extended reference to the professional achievements of Mr. Fritz, or to his fine character and the charm of his personality. This has been done elsewhere and by competent hands. But it will be proper to refer to the influence which the achievements and the character of the man whose name it bore has always had in the award of the John Fritz Medal. The recipient of it must have done some notable thing such as would have commended itself to the clear-headed judgment and the kindly approval, of the man in whose honor the Board was created to act. It is the wish and the ambition of the Board of Award that it shall ever maintain the standard set by the life and achievements of Mr. Fritz in the men and their achievements, to whom the John Fritz Medal is awarded.

The Board feels that the ordinary phrases of corporate action would be inappropriate upon the termination of such a splendid life by the summons to yet higher service, especially when such Board exists for the specific purpose of perpetuating and making influential the noble spirit and high ideals of such a life by rewarding achievement in its field.

What it may properly do is to express thankfulness that the life was spared so long, and to record its pledge that this Board will ever strive so to carry out its purpose that the name and the life of John Fritz may be powers for good through the years to come and in the fields of Applied Science in which he made himself so eminent, and that it shall thus help to keep bright the luster of that name.

Resolved, That this minute be spread in full upon the records of the John Fritz Medal Fund Corporation, and that copies of it be sent to the secretaries of the four engineering societies represented on that body for such publication as they may deem proper.

SIR WILLIAM HENRY WHITE

The distinguished Naval Architect and Honorary Member of The American Society of Mechanical Engineers, Sir William Henry White, passed away on the 27th of February, 1913, bearing the profound respect of the engineering profession throughout the world.

He entered the service of his country as an apprentice, and by assiduous application and inborn ability rose to the highest rank in naval construction in the British Admiralty.

Born in 1845, he entered the British Dockyard at Devenport as an apprentice at the age of fourteen. While working in the shops he attended the dockyard school and won the Admiralty Scholarship in 1863. During the year 1864 the Royal School of Naval Architects was established at South Kensington. Young White took first place in the first entrance examinations of that school, maintained first place, and was graduated first with the honorary degree of Fellow in 1867. He immediately entered the British Admiralty and remained there until 1902 when he was obliged to resign by reason of failing health.

In 1873 he became Secretary of the Council of Construction of the Navy under the Presidency of Sir Nathaniel Barnaby. He rapidly rose to the rank of Chief Constructor when in 1881 he resigned to take charge of the shipyard newly organized by Sir William Armstrong at Elswick, England. Here he designed many warships for foreign governments, including two cruisers for the United States. Upon the resignation of Sir Nathaniel Barnaby in 1885, and upon the recommendation of his former chief, he was recalled to the Admiralty as Director of Naval Construction.

At this time the question of largely expanding and rebuilding the British Navy was under consideration, and he found himself in charge of the engineering of this great work. Continuously for seventeen years, and until his health was broken by overwork in 1902, he labored on and revolutionized the navy. During that period he designed 245 warships, including 43 battleships, 202

cruisers of different classes, and many torpedo boats and destroyers, which were built at a cost exceeding $500,000,000. The largest warship previous to this time was 340 feet long and 10,600 tons displacement. His ships of the King Edward VII class were 425 feet long and 16,350 tons displacement. The speed of armored cruisers during his régime increased from 17 to 24.5 knots, the length from 315 to 500 feet, and the displacement from 8400 to 14,000 tons. His designs were so scientifically and accurately worked out that in no case did the actual ships exceed in draft or displacement the estimates of the design. High propulsive efficiency was always realized, and in no instance did a ship fail to attain the required speed.

Mr. White was rewarded for his notable achievements by a C.B. in 1891, by a K.C.B. in 1895, and by a special grant by Parliament in recognition of "exceptional services to the Navy."

After his retirement from the Admiralty in 1902, he regained his health and was enabled to take up other important engineering work. He was one of the Cunard Commission that settled the question of propelling the Lusitania and Mauretania by steam turbines, and was a director of the firm of builders of the latter. He also designed steamers with geared turbines for service in India.

Sir William was distinguished as an author. His Manual of Naval Architecture is a classic, and of no less value is his Treatise on Shipbuilding. His many papers on many different engineering subjects presented before many engineering and scientific societies all contributed to his renown.

He was greatly interested in the education of the engineer and did much to elevate the standards of technical schools. His lectures in the Royal School of Naval Architecture from 1870 to 1881 resulted in the accession to the navy and private shipbuilding works of a new and much needed class of designers.

He was honored by many societies by election to offices of distinction. He was Honorary Vice-President of the Institution of Naval Architects; Fellow of the Royal Society; Honorary Member of The American Society of Mechanical Engineers, of the American Society of Civil Engineers and of the American Society of Marine Engineers and Naval Architects. He has been President of the Institution of Civil Engineers, the Institution of Mechanical Engineers, the Institution of Naval Archi-

tects, the Institution of Marine Engineers, the Institute of Metals, and was President-Designate of the British Association.

He received the honorary degrees of D.Sc. from Cambridge University and Durham, England, and from Columbia University, New York City, also of D.Eng. from Sheffield and LL.D. from Glasgow. In 1911 he was awarded the John Fritz Medal for "notable achievements in naval architecture."

Sir William White's personal character was known of all engineers. He was above all, straight and manly, a gentleman ready to see the good in others, yet vigorous and steadfast in his own convictions. He was intolerant of shams and of opinions based on self-interest, but always ready to encourage the young engineer who was true to his profession.

Services were held simultaneously at Holy Trinity Church, Rochampton, and at St. Margaret's, Westminster, London.

The notable engineering societies and many other scientific and other organizations were represented at the services, including this Society. The interment is in the cemetery at Putney, London.

His wife, one daughter, and three sons, officers in the British Navy, remain to mourn his loss. J. M. S.

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THE JOURNAL

of

THE AMERICAN SOCIETY OF MECHANICAL ENGINEERS

JUNE 1913

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MEETING IN GERMANY, JUNE 21-JULY 8

A NEW ENGINEERING GRADE

To provide for an increasing number of engineers who attain positions of authority earlier than is prescribed in the requirements for Members, the Constitution has been amended, for the establishment of a new grade, that of *Associate Member*, intermediate between Junior and Member. This will permit men of attainment to join immediately who otherwise would not, preferring to wait till they could secure Member's grade, with the chances of not following their intentions as early as they ought and thus losing contact with the profession, and the publications and the acquaintanceship of the Society.

Juniors are able to secure recognition of progress in the profession earlier than they otherwise would.

This is a *professional and engineering grade* and the requirements are as follows:

An ASSOCIATE-MEMBER *shall be an Engineer* or a Teacher of Applied Science of twenty-five years of age or over. He must show by his experience or by his duties that he is competent to execute work in his profession.

To obtain promotion to a higher grade application should be made in the same manner as for admission, forms for which will be supplied by the Secretary or upon request of any of the Committee.

The old *Associate* grade is intended for non-technical men-of-affairs, presidents and employees of engineers.

An ASSOCIATE shall be thirty years of age or over. He *need not be an engineer*, but must have been so connected with some branch of Engineering or science, or the arts, or industries, that the Council will consider him qualified to coöperate with Engineers in the advancement of professional knowledge.

MONTHLY ELECTIONS

Another of the amendments just adopted provides for election of candidates at the regular monthly meetings of the Council instead of semi-annually as formerly. The new method will materially reduce the time required for action on applications for membership.

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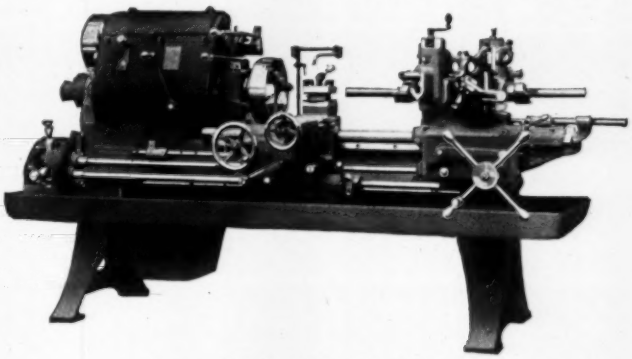

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Multi-stop and Double Turners

FIG. 1 illustrates the advantage of the *double stop* for each position of the turret, and the *double* adjustment of each turner. This piece has six finished diameters and six shoulders, and is turned by only three turners, which occupy only three positions on the turret. This not only leaves the remaining positions free for other tools, but it saves the operator the time and energy required to run the turret slide back each time.

All this is obtained without complication, and without introducing any features that are annoying when not in use.

In addition to the double stop for each of the six positions of the turret, we have an extra stop, consisting of a pin which may be dropped into any one of the six holes at the rear of the turret slide. This makes it possible to borrow five extra stops for any one of the tools, and gives to this tool seven length or shoulder stops, and leaves one stop for each of the remaining tools.

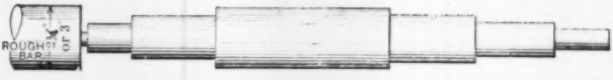

FIG. 1

The illustrations, Figs. 2 and 3, give examples of what one tool can do in this machine on chuck work, when we take advantage of the seven length stops and the seven shoulder stops of the cross-feed head.

Of course, in general practice three or four stops for one tool are all that will be needed, but since the modern cutting steels have greater durability, there is nothing lost by giving each tool all the work it can do.

Outer face and all shoulders and diameters accurately finished to independent stops by one tool. When roughing and finishing cuts are required, the roughing tool can be set near enough to use the same stops that are accurately set for the finishing tool. When an extra tool is used to give a roughing cut it is set as indicated by dotted lines in Figs. 2 and 3.

We find it difficult to illustrate all of the classes of work that can be turned out by this machine, but a little thought will suggest

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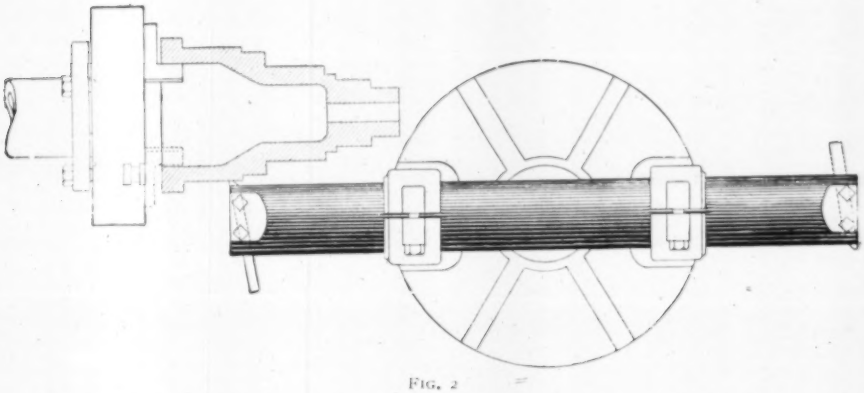


FIG. 2

many forms that may be readily handled in bar and chucking work, both steel and iron, on account of the many provisions for bringing both turret and cross slide up to fixed stops; either by power feed or by hand.

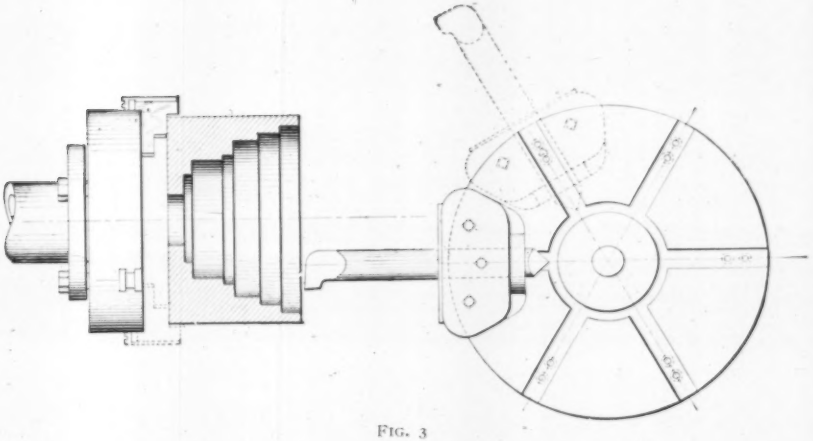
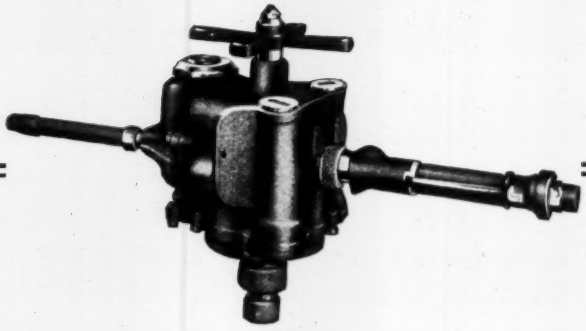


FIG. 3

Machine Company Queen Victoria St. London, England.

France and Spain, Ph. Bonvillain and E. Ronceray, 9 and 11 Rue des Envierges, Paris. Italy, W. Vogel, Milan.



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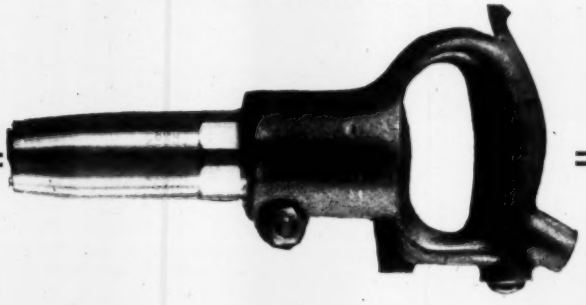

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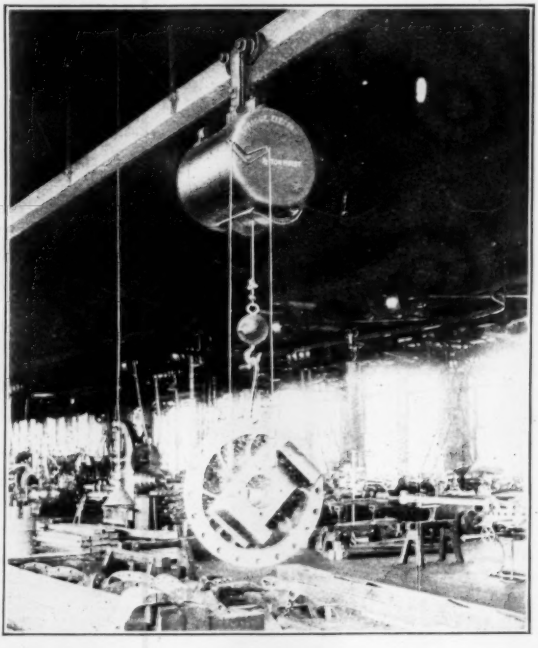

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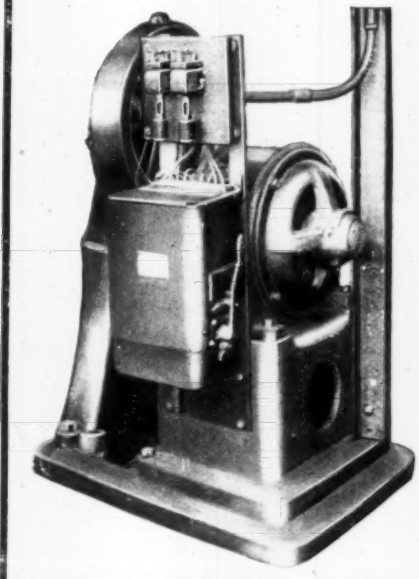

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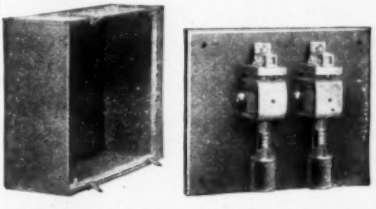

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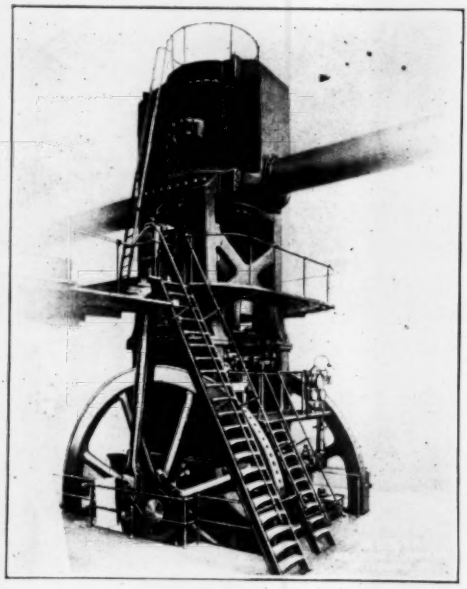

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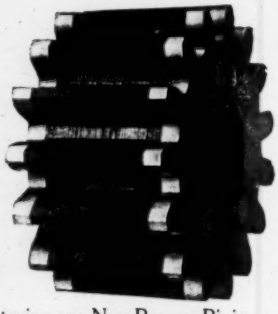

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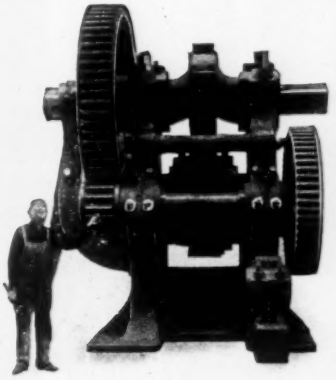

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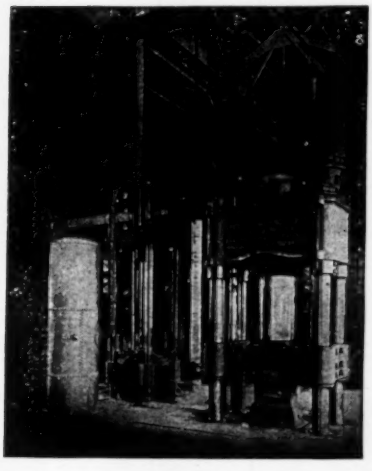

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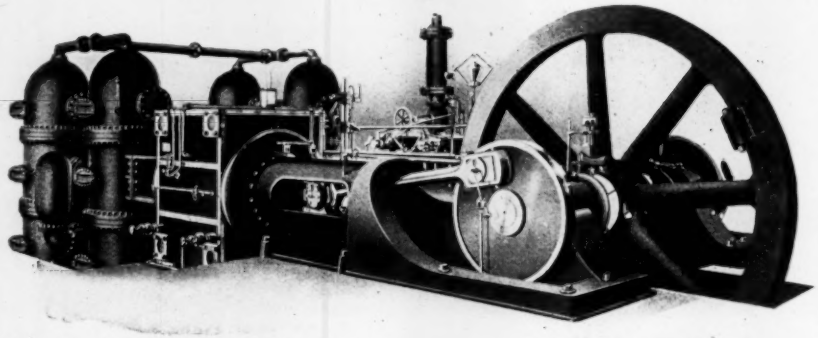

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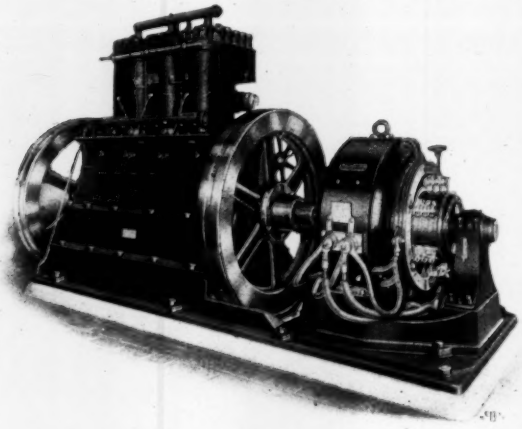

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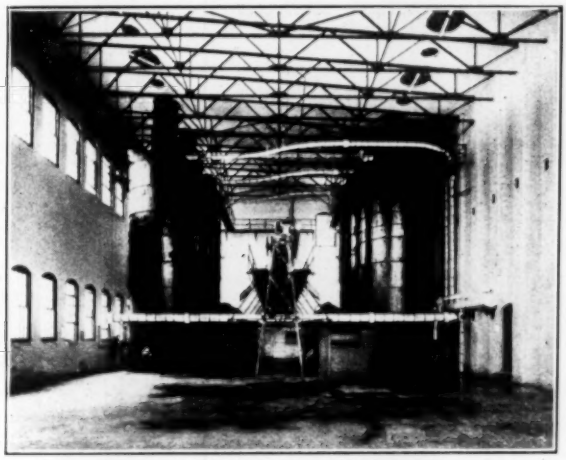

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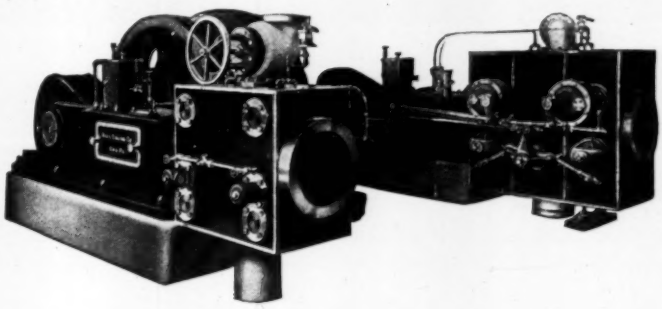

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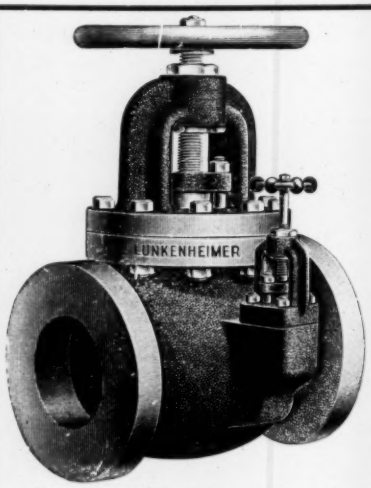

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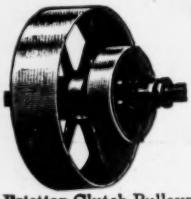

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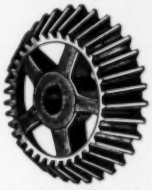

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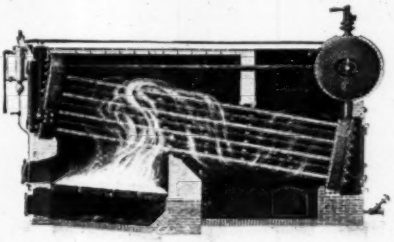

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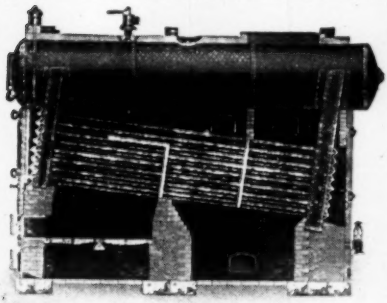

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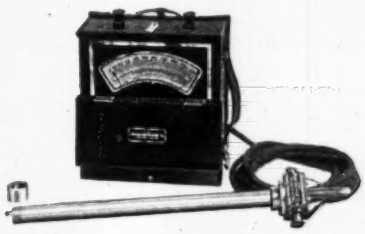

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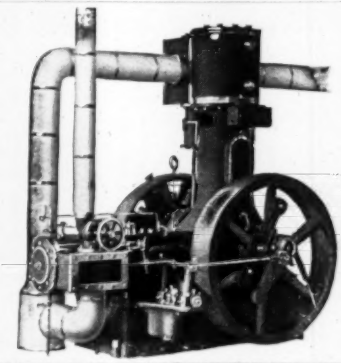

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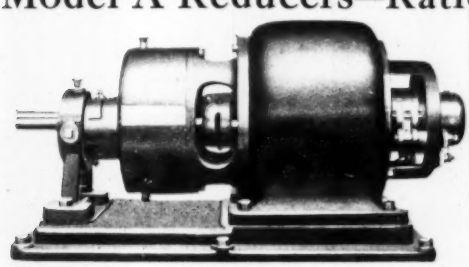

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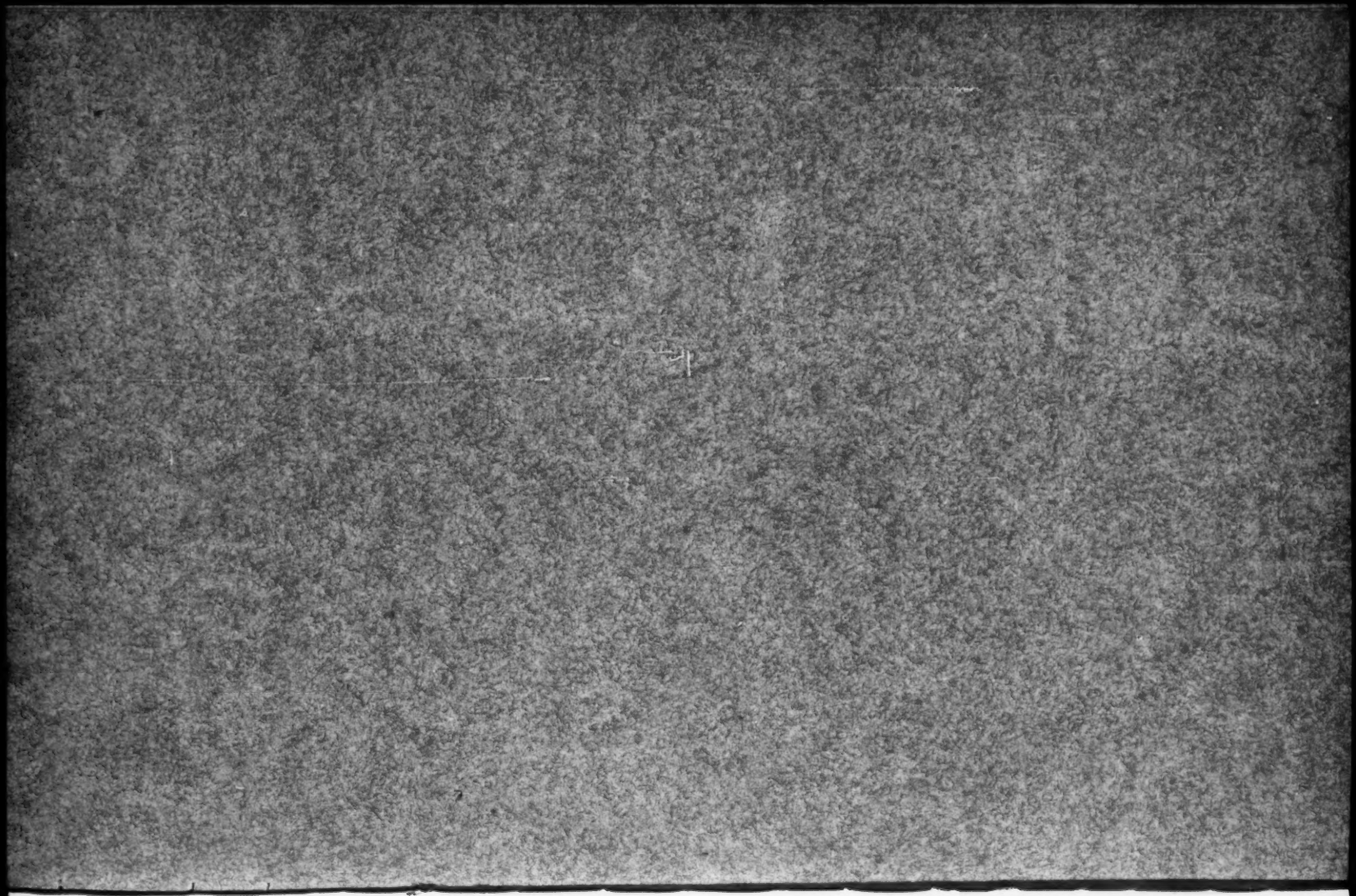
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